

Champs-Tech UY38 PSFB Series PSFB: FWCT + Current Doubler Transformers



General Notes:

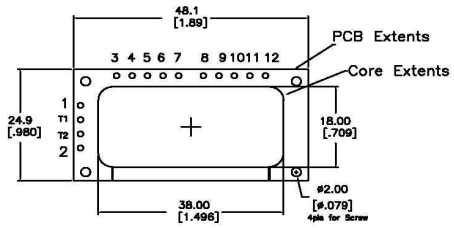
1. Topology: PSFB to Current Doubler and FWCT DC-DC Converter applications.
2. Add thermal pads in combination with heat sinks and clamps allows for higher power throughput at rated ambient and hot spot temperatures.
3. Size: 25mm wide x 48mm length x 10-12mm Height
4. Multilayer PCB optimization for lowest AC resistance & Proximity Loss Effect
5. Integer Turns available from 1T to 40T.
6. All designs can be supplied with planar windings embedded in the pcb of the Main Module of the converter. Installed power components, SM Assy and Heat Sink + incorporation into a module available.
7. Wide variety of PNs, Designs and Turns Ratios in stock. If not listed, Contact Us
8. Surface Mount, Thru-Hole, Pad-to-Pad, Embedded Planar Windings as Options

UY38 PSFB Catalog

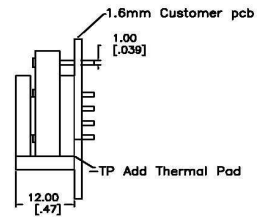
1. Output Power Ratings 600-1200W.

Champs PN	Vin (Min)	Vin (Max)	Vout	Iout (A dc)	Pout (Watts)	Freq (KHz)	Full Period Duty
UY38-1216-250D-10mm	210	440	250	4.0	1000	300	92%
UY38-1216-250D-TH-10mm							
UY38-100202-250D	210	440	17	65	1100	300	83.4%
UY38-100202-TH-250D							
UY38-160202-250D	260	420	28	21.5	600	200	88.7%
UY38-160202-TH-250D							
UY38-160202-250D-10mm							
UY38-160202-TH-250D-10mm							
UY38-240404-250D	340	420	25	48	1200	200	91.0%
UY38-240404-TH-250D							
UY38-240404-250D	330	420	48	25	1200	200	90.0%
UY38-240404-TH-250D					Current Doubler		

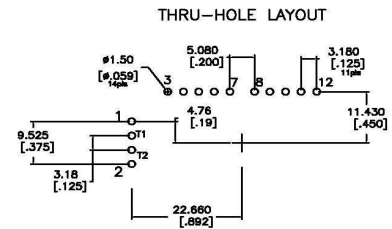
[TOP VIEW]



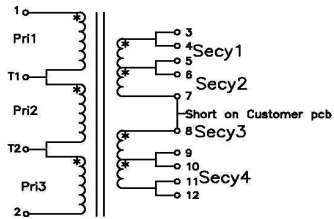
[PROFILE VIEW]



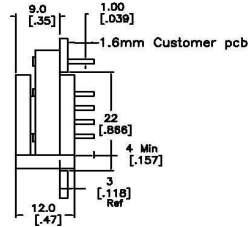
[TOP VIEW]



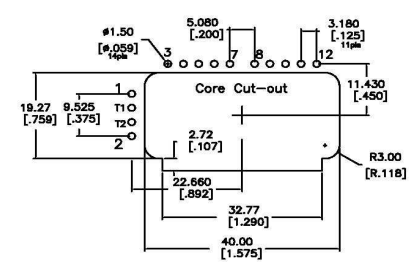
Schematic



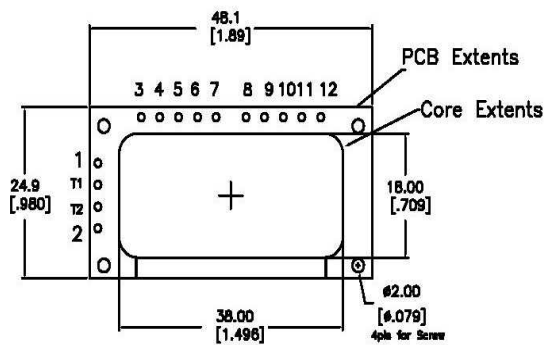
-TH LAYOUT w/ Core Cut-Out



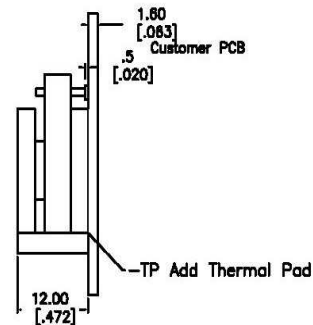
THRU-HOLE LAYOUT with Core Cut-Out



[TOP VIEW]

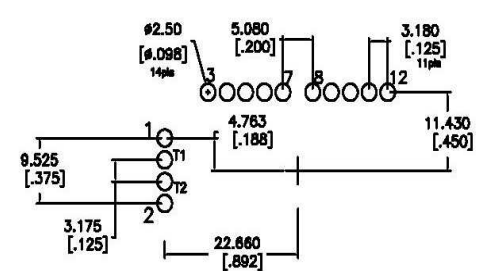


[PROFILE VIEW]

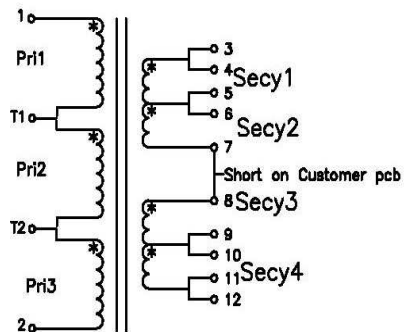


[TOP VIEW]

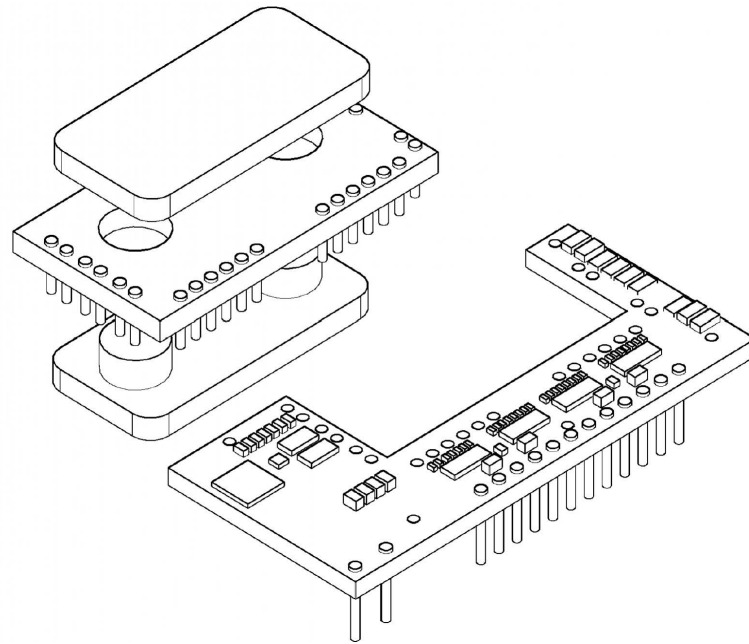
Surface Mount Pad LAYOUT



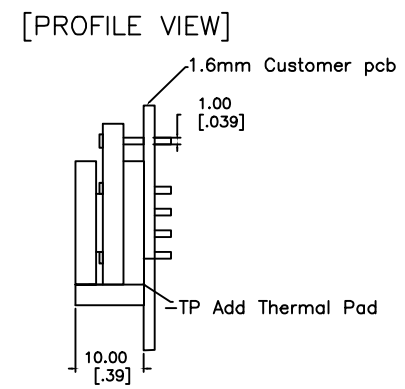
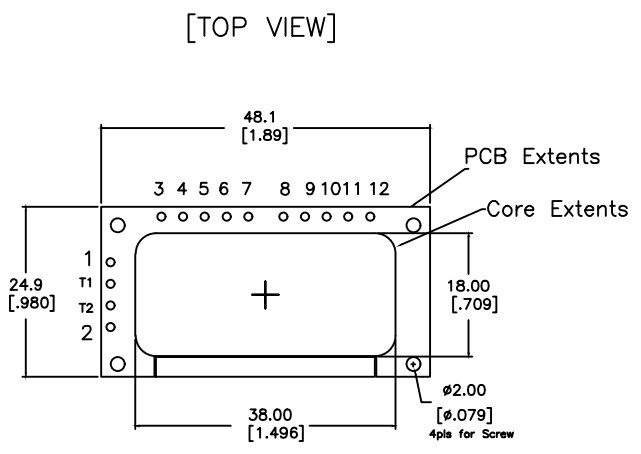
Schematic



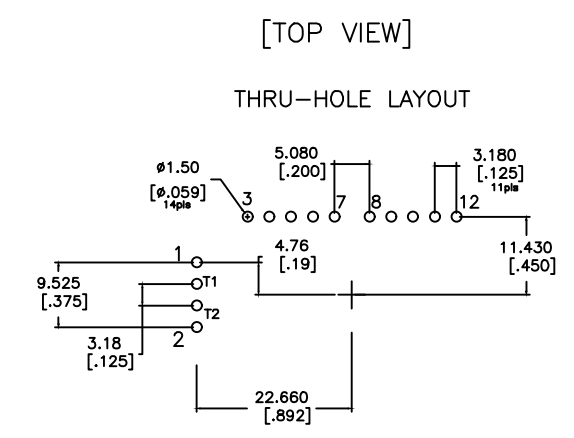
-SURFACE MOUNT LAYOUT



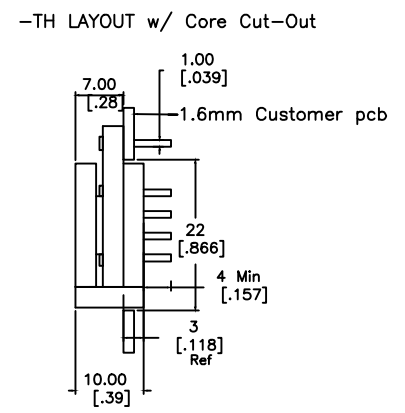
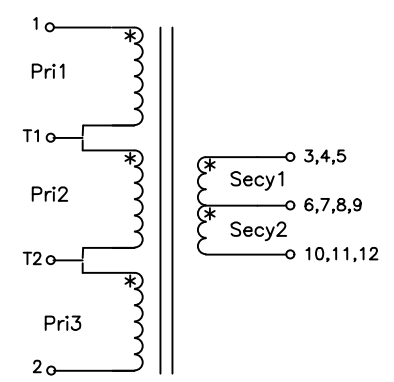
UY38 Mechanical Drawing



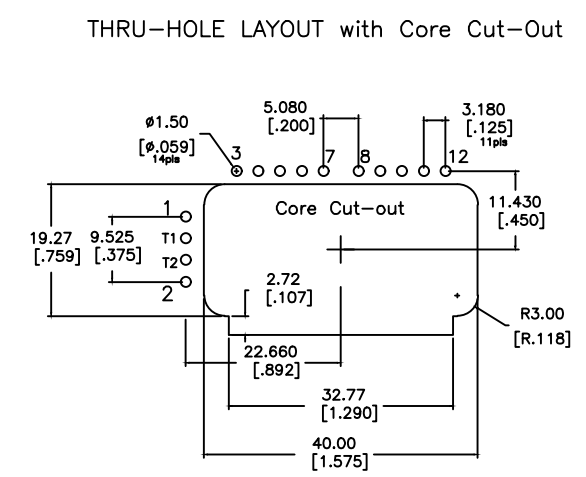
Order PN: UY38-1216-250D-TH-10mm



SCHEMATIC



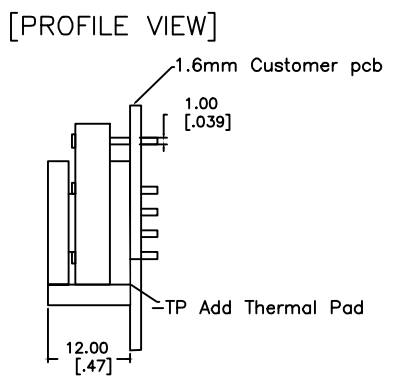
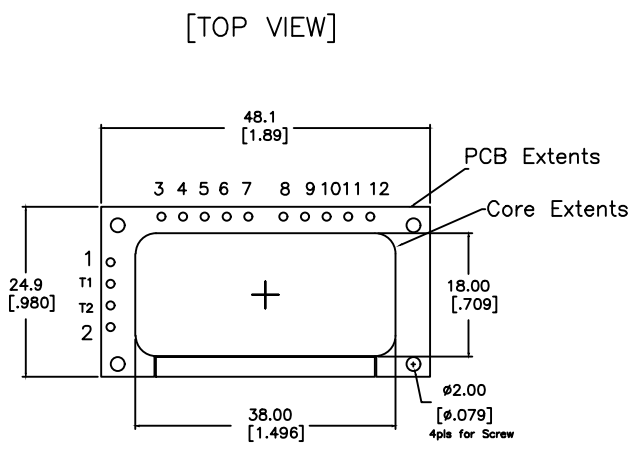
Order PN: UY38-1216-250D-TH-10mm



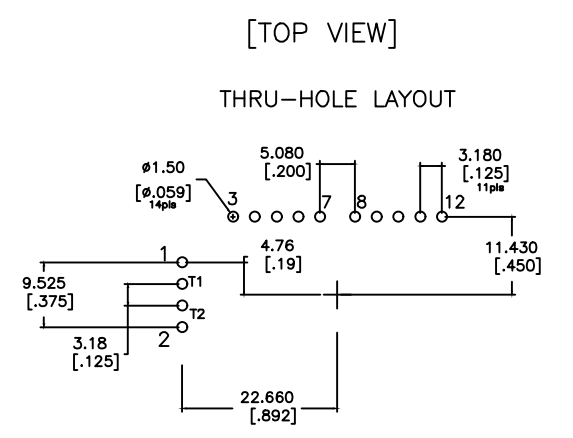
Electrical Information:

1. TURNS RATIO [1-2]:[3,4,5-6,7,8,9] & [1-2]:[6,7,8,9-10,11,12]=1:1.33 ±2%
2. INDUCTANCE [1-2] = 186 uH Nom. ±25% @100kHz/1.0V
3. LEAKAGE INDUCTANCE [1-2] : SHORT 3 thru 12 = 150 nH Nom @100kHz
4. DCR [1-2]=18 mohms Nom; [3,4,5-6,7,8,9]=[6,7,8,9-10,11,12]=25 mohms Nom
5. CAPACITANCE 1,2 to 3,12 = 380 pF Nom @100kHz
6. DIELECTRIC ISOLATION: [1,2] : [3,7][8,12] : CORE > 2500 VDC
DIELECTRIC ISOLATION: [3,7][8,12] : CORE > 500 VDC
7. RoHS & Reach Compliant
8. Temp Range: -55C To +155C [Inclusive of Temp Rise]

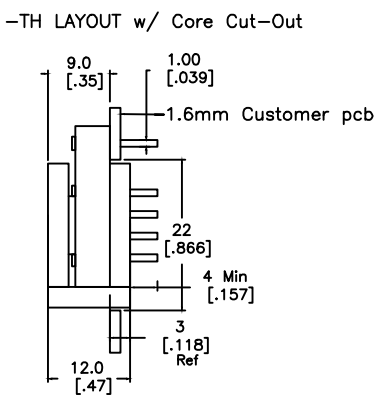
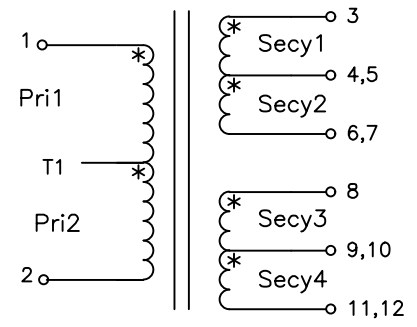
No.	DESCRIPTION	REVISIONS	DATE	APPR
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CHAMPS TECHNOLOGIES				
TOLERANCES/UNITS in MM UNLESS OTHERWISE INDICATED		SIGN	DATE	Champs-Tech PN UY38-1216-TH-250D-10mm
.XXX ± 0.254	DRAWN	E.L.	4/24/26	Customer
.XX ± 0.58	CHKD	J.L.		Part #:
.X ANGLE ± 1.5	APPR	H.E.	115.2.24-02	ISSUE A
			SIZE	SCALE 1:1
				REV 00



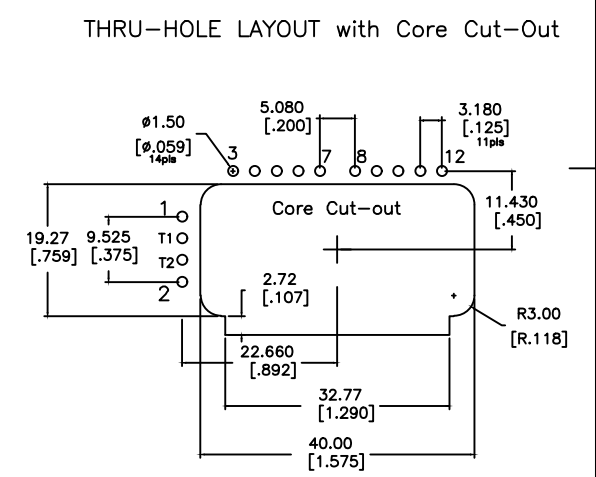
Order PN: UY38-100202-TH-250D



SCHEMATIC



Order PN: UY38-100202-TH-250D



Electrical Information:

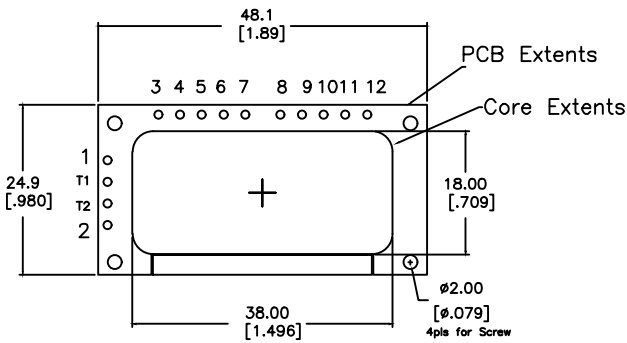
1. TURNS RATIO [1-2]:[3-4,5-6,7] & [8-9,10-11,12] = 5:1 ±2%
2. INDUCTANCE [1-2] = 380 uH Nom. ±25% @100kHz/1.0V
3. LEAKAGE INDUCTANCE [1-2] : SHORT 3 thru 12 = 80 nH Nom @100kHz
4. DCR [1-2]=22 mohms Nom; [3-4,5-6,7] = [8-9,10-11,12]=1.5 mohms Nom
5. CAPACITANCE 1,2 to 3,12 = 420 pF Nom @100kHz
6. DIELECTRIC ISOLATION: [1,2] : [3,7][8,12] : CORE > 2500 VDC
DIELECTRIC ISOLATION: [3,7][8,12] : CORE > 500 VDC
7. RoHS & Reach Compliant
8. Temp Range: -55C To +155C [Inclusive of Temp Rise]

No.	DESCRIPTION	REVISIONS	DATE	APPR
THIRD ANGLE PROJECTION				
CHAMPS TECHNOLOGIES				
TOLERANCES/UNITS in MM UNLESS OTHERWISE INDICATED		SIGN	DATE	Champs-Tech PN UY38-100202-TH-250D
.XXX ± 0.254	DRAWN	E.L.	4/24/26	Customer
.XX ± 0.58	CHKD	J.L.		Part #:
.X ANGLE ± 1.5	APPR	H.E.	115.2.24-02	ISSUE A
		SIZE	SCALE 1:1	REV 00

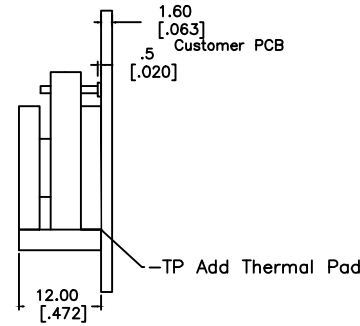
[TOP VIEW]

[PROFILE VIEW]

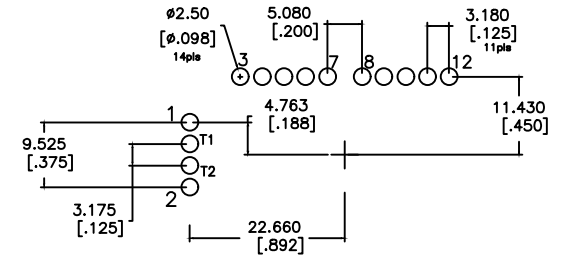
[TOP VIEW]



-SURFACE MOUNT LAYOUT

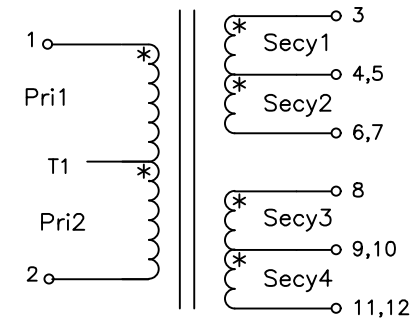


Surface Mount Pad LAYOUT



Order PN: UY38-100202-250D

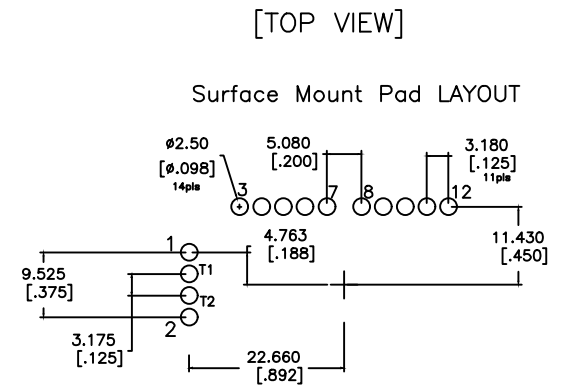
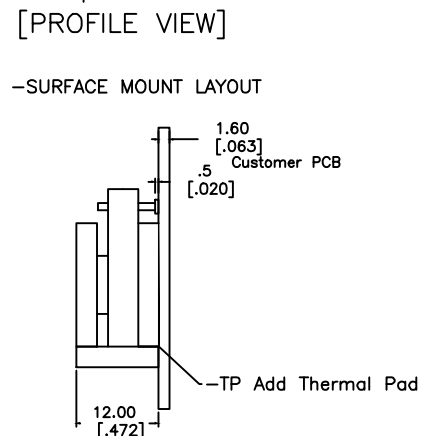
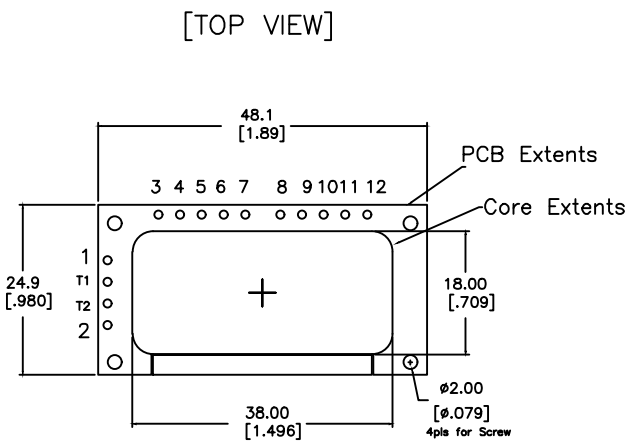
SCHEMATIC



Electrical Information:

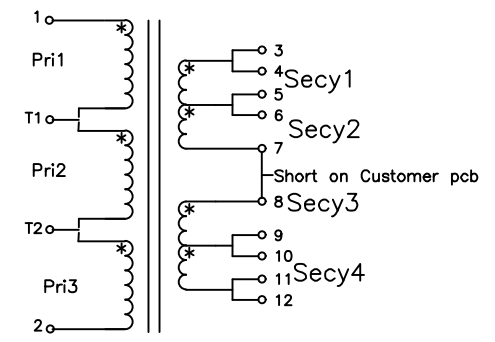
1. TURNS RATIO [1-2]:[3-4,5-6,7] & [8-9,10-11,12] = 5:1 ±2%
2. INDUCTANCE [1-2] = 380 uH Nom. ±25% @100kHz/1.0V
3. LEAKAGE INDUCTANCE [1-2] : SHORT 3 thru 12 = 80 nH Nom @100kHz
4. DCR [1-2]=22 mohms Nom; [3-4,5-6,7] = [8-9,10-11,12]=1.5 mohms Nom
5. CAPACITANCE 1,2 to 3,12 = 420 pF Nom @100kHz
6. DIELECTRIC ISOLATION: [1,2] : [3,7][8,12] : CORE > 2500 VDC
DIELECTRIC ISOLATION: [3,7][8,12] : CORE > 500 VDC
7. RoHS & Reach Compliant
8. Temp Range: -55C To +155C [Inclusive of Temp Rise]

No.	DESCRIPTION	REVISIONS	DATE	APPR
THIRD ANGLE PROJECTION				
CHAMPS TECHNOLOGIES				
TOLERANCES/UNITS in MM UNLESS OTHERWISE INDICATED		SIGN	DATE	Champs-Tech PN UY38-100202-250D
.XXX ± 0.254	DRAWN	E.L.	4/24/26	Customer
.XX ± 0.58	CHKD	J.L.		Part #:
.X ANGLE ± 1.5	APPR	H.E.	115.2.24-02	ISSUE A
			SCALE 1:1	REV 00



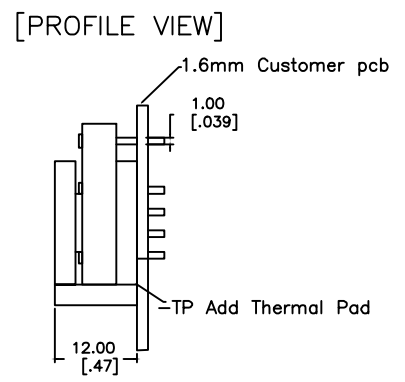
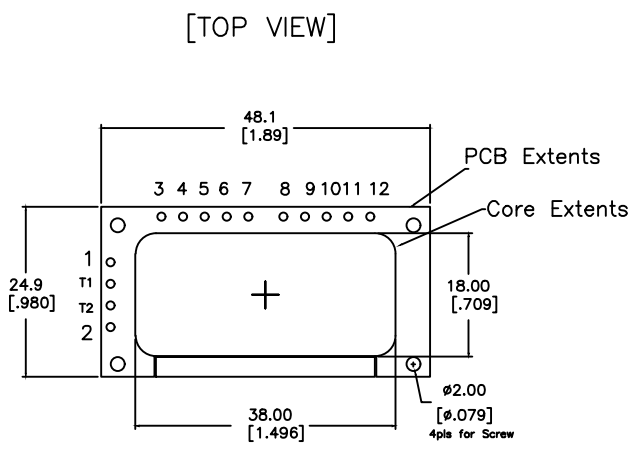
Order PN: UY38-240404-250D

Schematic

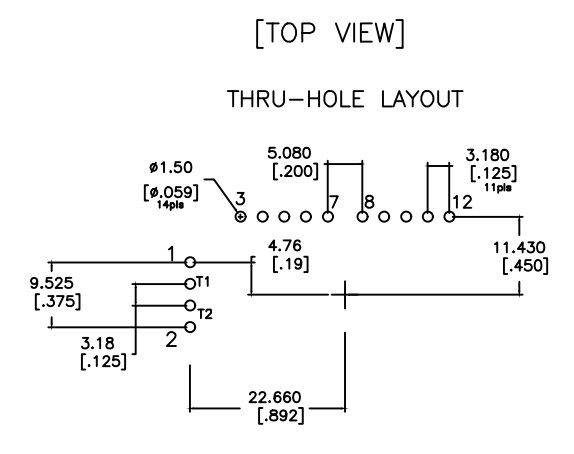


- Electrical Information:
1. TURNS RATIO [1-2] : [3,4-7] & [8-11,12] = 6:1 ±2%
 2. INDUCTANCE [1-2] = 860 uH Nom. ±25% @100kHz/1.0V
 3. LEAKAGE INDUCTANCE [1-2] : SHORT 3 thru 12 = 300 nH Nom @100kHz
 4. DCR [1-2]= 78 mohms Nom || [3-7]=[8-12]= 3 mohms Nom
 5. CAPACITANCE 1,2 to 3,12 = 560 pF Nom @100kHz
 6. DIELECTRIC ISOLATION: [1,2] : [3,7][8,12] : CORE > 2500 VDC
DIELECTRIC ISOLATION: [3,7][8,12] : CORE > 500 VDC
 7. RoHS & Reach Compliant
 8. Temp Range: -55C To +155C [Inclusive of Temp Rise]

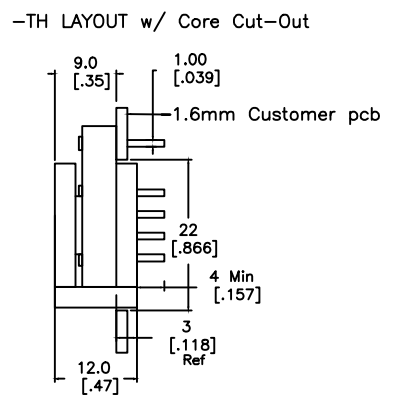
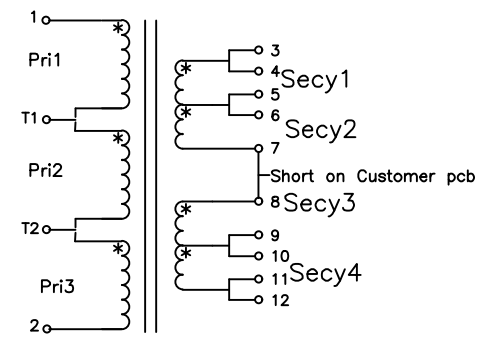
No.		DESCRIPTION		REVISIONS	DATE	APPR
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CHAMPS TECHNOLOGIES						
TOLERANCES/UNITS in MM UNLESS OTHERWISE INDICATED		SIGN	DATE	Champs-Tech PN UY38-240404-250D		
.XXX ± 0.254	DRAWN	E.L.	4/27/26	Customer	ISSUE	REV
.XX ± 0.58	CHKD	J.L.		Part #:	A	00
.X ± 1.5	APPR	H.E.	115.2.24-02	SIZE	SCALE 1:1	



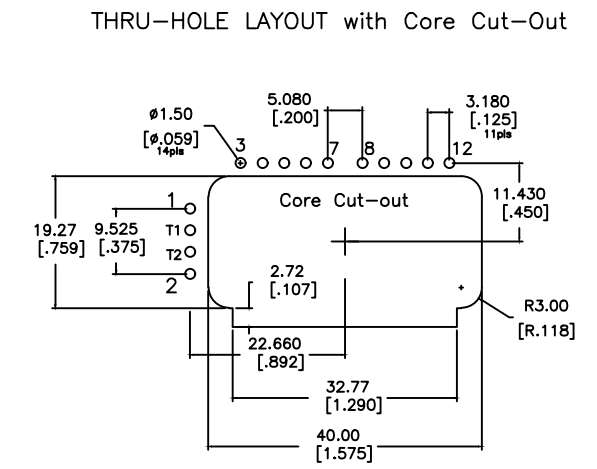
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Schematic



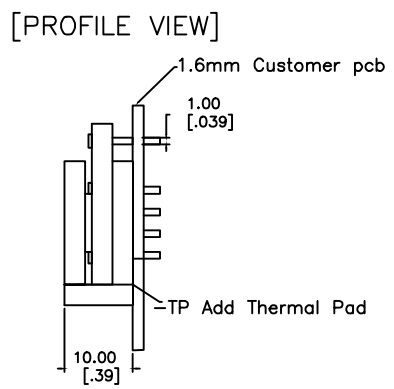
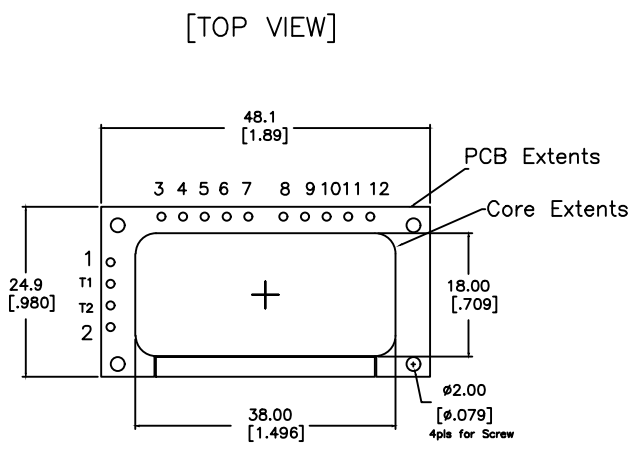
Order PN: UY38-240404-TH-250D



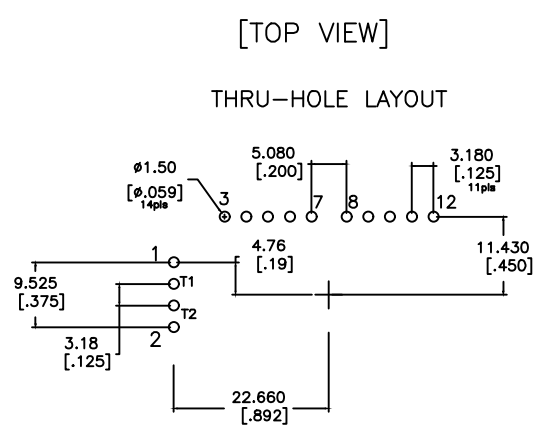
Electrical Information:

1. TURNS RATIO [1-2] : [3,4-7] & [8-11,12] = 6:1 ±2%
2. INDUCTANCE [1-2] = 860 uH Nom. ±25% @100kHz/1.0V
3. LEAKAGE INDUCTANCE [1-2] : SHORT 3 thru 12 = 300 nH Nom @100kHz
4. DCR [1-2]= 78 mohms Nom || [3-7]=[8-12]= 3 mohms Nom
5. CAPACITANCE 1,2 to 3,12 = 560 pF Nom @100kHz
6. DIELECTRIC ISOLATION: [1,2] : [3,7][8,12] : CORE > 2500 VDC
DIELECTRIC ISOLATION: [3,7][8,12] : CORE > 500 VDC
7. RoHS & Reach Compliant
8. Temp Range: -55C To +155C [Inclusive of Temp Rise]

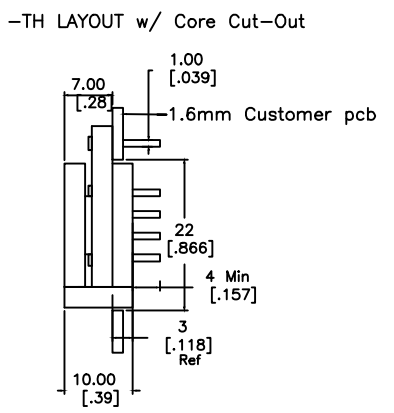
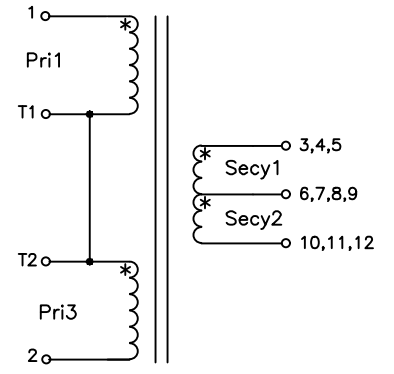
No.	DESCRIPTION	REVISIONS	DATE	APPR
THIRD ANGLE PROJECTION				
CHAMPS TECHNOLOGIES				
TOLERANCES/UNITS in MM UNLESS OTHERWISE INDICATED		SIGN	DATE	Champs-Tech PN UY38-240404-TH-250D
.XXX ± 0.254	DRAWN	E.L.	4/27/26	Customer
.XX ± 0.58	CHKD	J.L.		Part #:
.X ANGLE ± 1.5	APPR	H.E.	115.2.24-02	ISSUE A REV 00
		SIZE	SCALE 1:1	



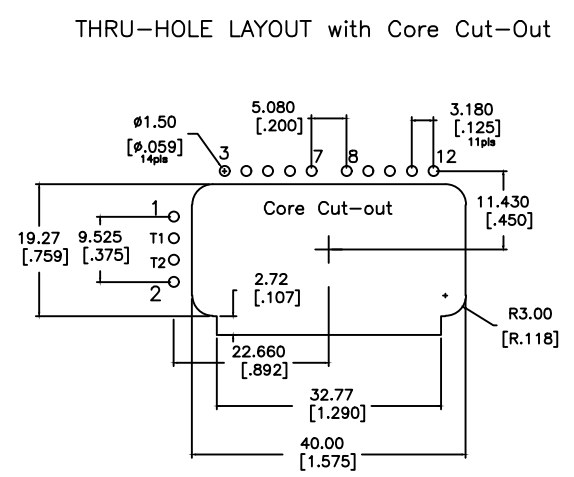
Order PN: UY38-160202-TH-250D-10mm



Schematic



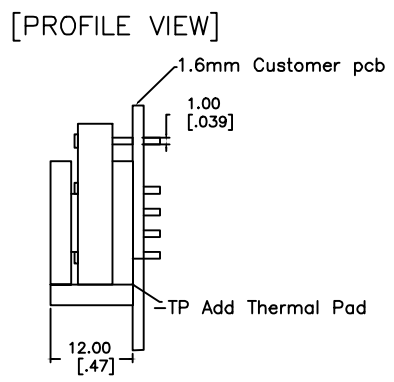
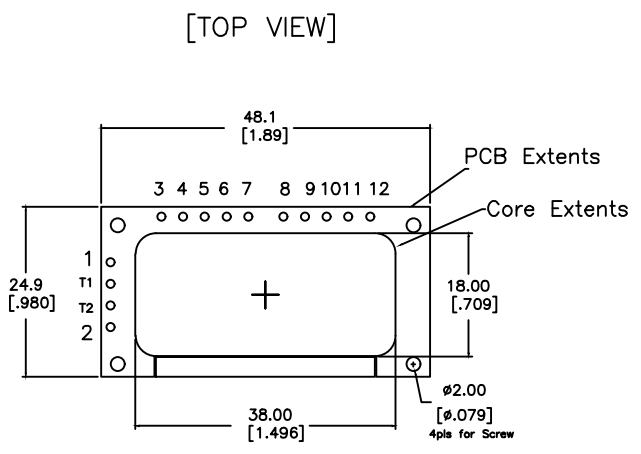
Order PN: UY38-160202-TH-250D-10mm



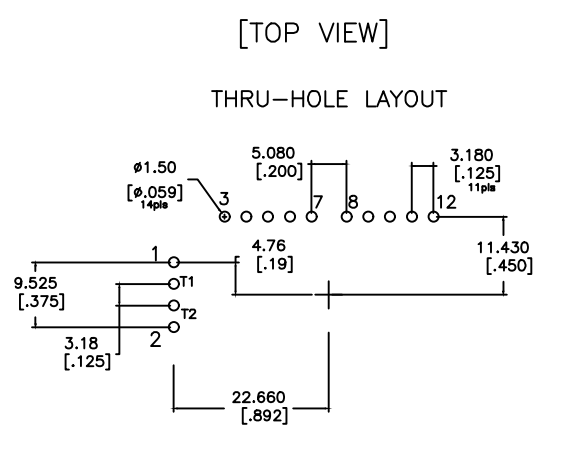
Electrical Information:

1. TURNS RATIO [1-2]:[3,4,5-6,7,8,9] & [6,7,8,9-10,11,12]=8:1 ±2%
2. INDUCTANCE [1-2] = 380 uH Nom. ±25% @100kHz/1.0V
3. LEAKAGE INDUCTANCE [1-2] : SHORT 3 thru 12 = 200 nH Nom @100kHz
4. DCR [1-2]=60 mohms Nom; [3,4,5-6,7,8,9]=[6,7,8,9-10,11,12]=1.5 mohms Nom
5. CAPACITANCE 1,2 to 3,12 = 420 pF Nom @100kHz
6. DIELECTRIC ISOLATION: [1,2] : [3,7][8,12] : CORE > 2500 VDC
DIELECTRIC ISOLATION: [3,7][8,12] : CORE > 500 VDC
7. RoHS & Reach Compliant
8. Temp Range: -55C To +155C [Inclusive of Temp Rise]

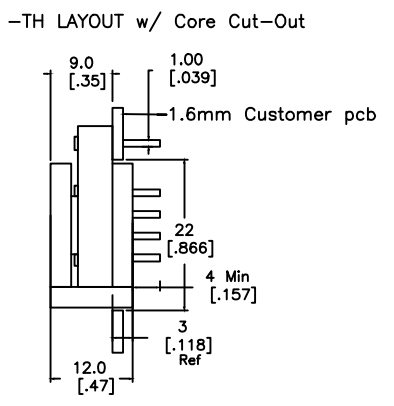
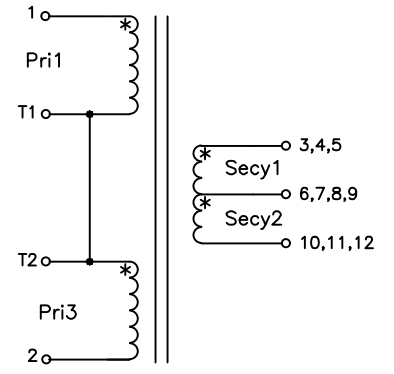
No.	DESCRIPTION	REVISIONS	DATE	APPR
THIRD ANGLE PROJECTION				
CHAMPS TECHNOLOGIES				
TOLERANCES/UNITS in MM UNLESS OTHERWISE INDICATED		SIGN	DATE	Champs-Tech PN UY38-160202-TH-250D-10mm
.XXX ± 0.254	DRAWN	E.L.	4/24/26	Customer
.XX ± 0.58	CHKD	J.L.		Part #:
.X ANGLE ± 1.5	APPR	H.E.	115.2.24-02	ISSUE A
		SIZE	SCALE 1:1	REV 00



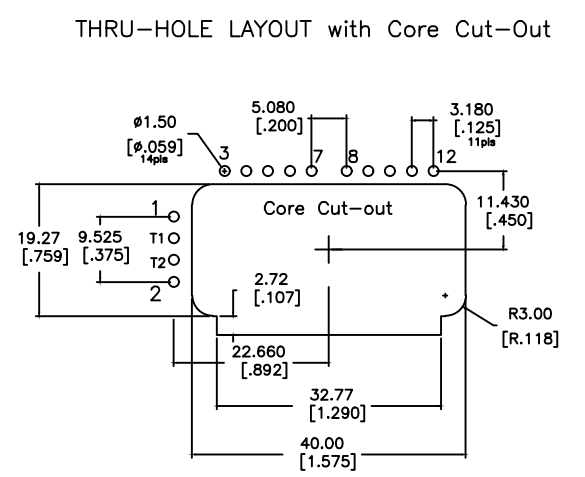
Order PN: UY38-160202-TH-250D



Schematic



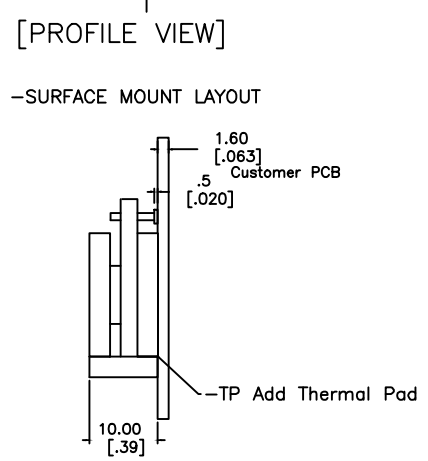
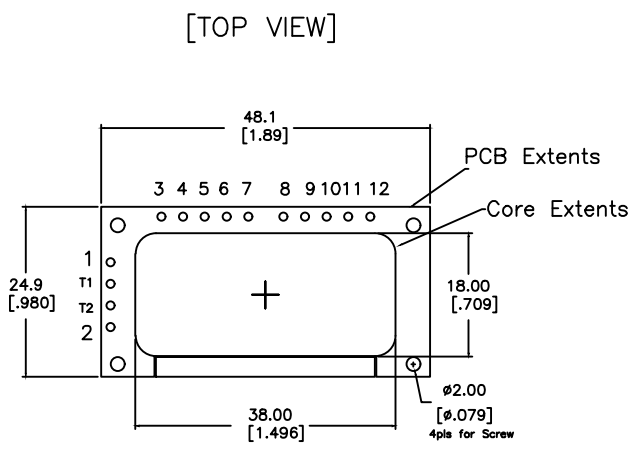
Order PN: UY38-160202-TH-250D



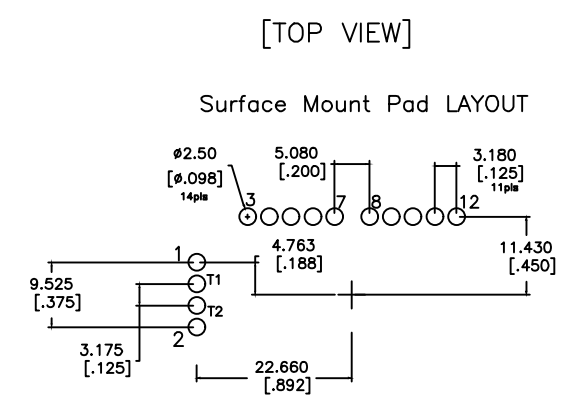
Electrical Information:

1. TURNS RATIO [1-2]:[3,4,5-6,7,8,9] & [6,7,8,9-10,11,12]=8:1 ±2%
2. INDUCTANCE [1-2] = 380 uH Nom. ±25% @100kHz/1.0V
3. LEAKAGE INDUCTANCE [1-2] : SHORT 3 thru 12 = 200 nH Nom @100kHz
4. DCR [1-2]=60 mohms Nom; [3,4,5-6,7,8,9]=[6,7,8,9-10,11,12]=1.5 mohms Nom
5. CAPACITANCE 1,2 to 3,12 = 420 pF Nom @100kHz
6. DIELECTRIC ISOLATION: [1,2] : [3,7][8,12] : CORE > 2500 VDC
DIELECTRIC ISOLATION: [3,7][8,12] : CORE > 500 VDC
7. RoHS & Reach Compliant
8. Temp Range: -55C To +155C [Inclusive of Temp Rise]

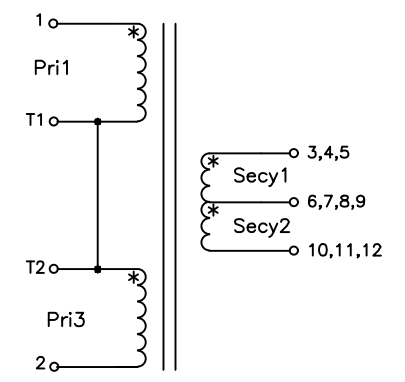
No.		DESCRIPTION		REVISIONS	DATE	APPR
THIRD ANGLE PROJECTION						
CHAMPS TECHNOLOGIES						
TOLERANCES/UNITS in MM UNLESS OTHERWISE INDICATED		SIGN	DATE	Champs-Tech PN UY38-160202-TH-250D		
XXX ± 0.254	DRAWN	E.L.	4/24/26	Customer		ISSUE
.XX ± 0.58	CHKD	J.L.		Part #:		REV
.X ANGLE ± 1.5	APPR	H.E.	115.2.24-02	SIZE	SCALE 1:1	00



Order PN: UY38-160202-250D-10mm



Schematic

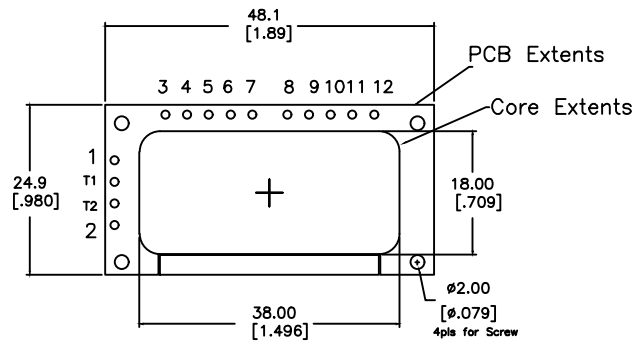


Electrical Information:

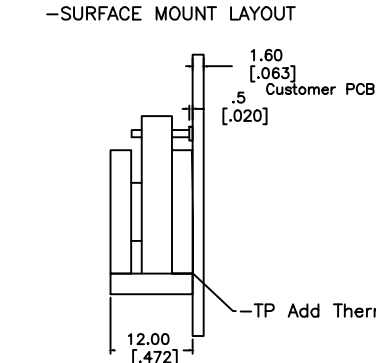
1. TURNS RATIO [1-2]:[3,4,5-6,7,8,9] & [6,7,8,9-10,11,12]=8:1 ±2%
2. INDUCTANCE [1-2] = 380 uH Nom. ±25% @100kHz/1.0V
3. LEAKAGE INDUCTANCE [1-2] : SHORT 3 thru 12 = 200 nH Nom @100kHz
4. DCR [1-2]=60 mohms Nom; [3,4,5-6,7,8,9]=[6,7,8,9-10,11,12]=1.5 mohms Nom
5. CAPACITANCE 1,2 to 3,12 = 420 pF Nom @100kHz
6. DIELECTRIC ISOLATION: [1,2] : [3,7][8,12] : CORE > 2500 VDC
DIELECTRIC ISOLATION: [3,7][8,12] : CORE > 500 VDC
7. RoHS & Reach Compliant
8. Temp Range: -55C To +155C [Inclusive of Temp Rise]

No.	DESCRIPTION	REVISIONS	DATE	APPR
THIRD ANGLE PROJECTION				
CHAMPS TECHNOLOGIES				
DRAWN		SIGN	DATE	Champs-Tech PN UY38-160202-250D-10mm
CHKD		J.L.	4/24/26	Customer
APPR		H.E.	115.2.24-02	Part #: ISSUE A REV 00
TOLERANCES/UNITS in MM UNLESS OTHERWISE INDICATED			SIZE	SCALE 1:1
.XXX ± 0.254				
.XX ± 0.58				
.X ANGLE ± 1.5				

[TOP VIEW]

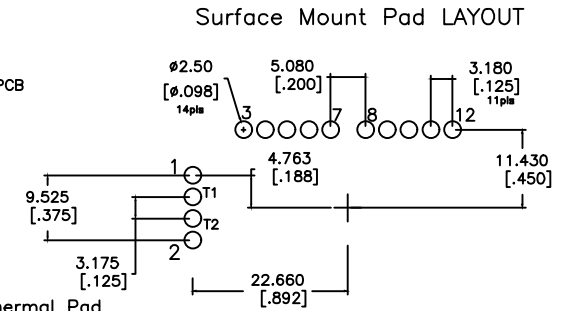


[PROFILE VIEW]

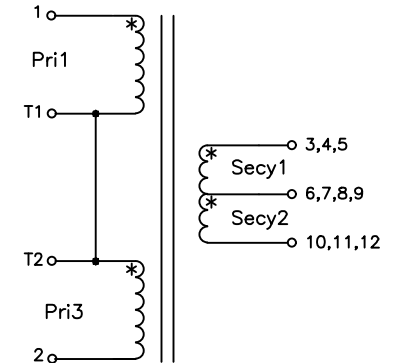


Order PN: UY38-160202-250D

[TOP VIEW]



Schematic



Electrical Information:

1. TURNS RATIO [1-2]:[3,4,5-6,7,8,9] & [6,7,8,9-10,11,12]=8:1 ±2%
2. INDUCTANCE [1-2] = 380 uH Nom. ±25% @100kHz/1.0V
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No.	DESCRIPTION	REVISIONS	DATE	APPR
THIRD ANGLE PROJECTION				
CHAMPS TECHNOLOGIES				
DRAWN		SIGN	DATE	Champs-Tech PN UY38-160202-250D
CHKD		E.L.	4/24/26	Customer
APPR		J.L.		Part #: ISSUE A REV 00
		H.E.	115.2.24-02	SIZE SCALE 1:1